

WHAT IS CLAIMED IS:

1. A radio communication system performing a soft hand-off  
procedure for a mobile station, the radio communication system  
5 comprising;

a base station controller for determining a commencement and  
a termination of the soft hand-off procedure,

a first base station for performing asynchronous  
communication with said base station controller via a first  
10 communication line and for assigning a first hand-off exclusive  
bandwidth to the first communication line bases on the  
commencement of the soft hand-off procedure, and

a second base station for performing asynchronous  
communication with said base station controller via a second  
15 communication line and for assigning a second hand-off  
exclusive bandwidth, that is approximately equal to the first  
hand-off exclusive bandwidth, to the second communication line  
bases on the commencement of the soft hand-off procedure.

20 2. An radio communication system according to claim 1,  
wherein the asynchronous communication is asynchronous  
transfer mode (ATM) communication.

3. An radio communication system according to claim 1,  
25 wherein the first and second hand-off exclusive bandwidths are  
the same and a fixed value.

4. An radio communication system according to claim 1,  
wherein said the first base station comprising:

a soft hand-off bandwidth assign equipment for assigning  
5 the first hand-off exclusive bandwidth to the first  
communication line,

a normal bandwidth assign equipment for assigning a normal  
communication bandwidth to the first communication line, and

a bandwidth controller for activating said soft hand-off  
10 bandwidth during the soft hand-off procedures based on the  
commencement and a termination of the soft hand-off procedure,  
and wherein the second base station comprising:

a soft hand-off bandwidth assign equipment for assigning  
the second hand-off exclusive bandwidth to the second  
15 communication line,

a normal bandwidth assign equipment for assigning a normal  
communication bandwidth to the second communication line, and

a bandwidth controller for activating said soft hand-off  
bandwidth during the soft hand-off procedures based on the  
20 commencement and a termination of the soft hand-off procedure.

5. An radio communication system according to claim 1,  
wherein

said first base station releases the first hand-off  
25 exclusive bandwidth from the first communication line and stops  
transmitting to the mobile station in response to the

termination of the soft hand-off procedure, and

said second base station releases the second hand-off exclusive bandwidth from the second communication line and assigns a normal communication bandwidth to the second communication line in response to the termination of the soft hand-off procedure.

6. A radio communication system performing a soft hand-off procedure for a mobile station, the radio communication system comprising;

a base station controller for determining a commencement and a termination of the soft hand-off procedure,

a first base station for performing asynchronous communication with said base station controller via a first communication line, for notifying a first open-bandwidth of the first communication line to said base station controller, which is possible to be assigned for the soft hand-off procedure, and for assigning a common hand-off exclusive bandwidth to the first communication line in response to the commencement of the soft hand-off procedure, and

a second base station for performing asynchronous communication with said base station controller via a second communication line, for notifying a second open-bandwidth of the second communication line to said base station controller, which is possible to be assigned for the soft hand-off procedure and for assigning the common hand-off exclusive bandwidth to

the second communication line in response to the commencement of the soft hand-off procedure,

wherein said base station controller determines the common hand-off exclusive bandwidth by selecting a smaller bandwidth between the first open-bandwidth and the second open-bandwidth based.

7. An radio communication system according to claim 6, wherein said the first base station comprising:

an open-bandwidth memory for storing the first open-bandwidth corresponding to the first communication line

a soft hand-off bandwidth assign equipment for notifying the first open-bandwidth to the base station controller and for assigning the common hand-off exclusive bandwidth to the first communication line,

a normal bandwidth assign equipment for assigning a normal communication bandwidth to the first communication line, and

a bandwidth controller for activating said soft hand-off bandwidth during the soft hand-off procedures in response to the commencement and the termination of the soft hand-off procedure,

and wherein said the second base station comprising:

an open-bandwidth memory for storing the second open-bandwidth corresponding to the second communication line,

a soft hand-off bandwidth assign equipment for notifying the second open-bandwidth to the base station controller and

for assigning the common hand-off exclusive bandwidth to the second communication line,

a normal bandwidth assign equipment for assigning a normal communication bandwidth to the second communication line, and

5 a bandwidth controller for activating said soft hand-off bandwidth during the soft hand-off procedures in response to the commencement and the termination of the soft hand-off procedure.

10 8. An radio communication system according to claim 6, wherein when the first open-bandwidth and the second open-bandwidth exceeds a maximum bandwidth of a radio channel assigned to each of the first and second base stations, the base station controller selects the maximum bandwidth as the common  
15 hand-off exclusive bandwidth.

9. A soft hand-off method in a radio communication system comprising a base station controller which communicates with each of a first base station and a second base station by  
20 performing asynchronous communication, the method comprising the steps of;

assigning a normal communication bandwidth to a first communication line between the base station controller and the first base station for normal communication between the base  
25 station controller and the mobile station,

determining a commencement of the soft hand-off procedure

between the first base station and the second base station,  
assigning a first hand-off exclusive bandwidth to the first  
communication line,

5 assigning a second hand-off exclusive bandwidth, which is  
approximately equal to the first hand-off exclusive bandwidth,  
to a second communication line between the base station  
controller and the second base station, and

10 simultaneously transmitting packet signals from the base  
station controller to each of the first and second base stations  
via the first and second communication lines respectively.

15 10. A soft hand-off method according to claim 9, wherein the  
first and second hand-off exclusive bandwidths are the same and  
a fixed value.

20 11. A soft hand-off method according to claim 9, wherein the  
asynchronous communication is asynchronous transfer mode (ATM)  
communication.

25 12. A soft hand-off method according to claim 9, the method  
further comprising the steps of;

determining a termination of the soft hand-off procedure,  
releasing the first hand-off exclusive bandwidth from the  
first communication line,

25 assigning a normal communication bandwidth to the second  
communication line, and

releasing the second hand-off exclusive bandwidth from the second communication line,

wherein, the base station controller communicate with the second base station via the second communication line to which the normal communication bandwidth is assigned, and the first base station stops transmit to the mobile station.

13. A soft hand-off method in a radio communication system comprising a base station controller which communicates with each of a first base station and a second base station by performing asynchronous packet communication, the method comprising the steps of;

assigning a normal communication bandwidth to a first communication line between the base station controller and the first base station for normal communication between the base station controller and a mobile station,

determining a commencement of the soft hand-off procedure between the first base station and the second base station,

notifying a first open-bandwidth that is possible to be assigned to the first communication line for the soft hand-off procedure,

notifying a second open-bandwidth that is possible to be assigned to a second communication line between the base station controller and the first base station for the soft hand-off procedure,

comparing the first open-bandwidth of the first

communication line with the second open-bandwidth of the second communication line,

selecting a smaller bandwidth between the first open-bandwidth and the second open-bandwidth,

5 transmitting packet signals from the base station controller to the first base station via the first communication line to which the common hand-off exclusive bandwidth is assigned, and

10 transmitting packet signals from the base station controller to the second base station via the second communication line to which the common hand-off exclusive bandwidth is assigned.

14. A soft hand-off method according to claim 13, the method further comprising the steps of;

15 determining a termination of the soft hand-off procedure; releasing the common hand-off exclusive bandwidth from the first communication line,

assigning a normal communication bandwidth to the second communication line, and

20 releasing the common hand-off exclusive bandwidth from the second communication line,

wherein, the base station controller communicate with the second base station via the second communication line to which the normal communication bandwidth is assigned and the first base station stops transmitting to the mobile station.